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Implementation of the cardiovascular prevention guidelines in clinical practice. Results from the POLASPIRE II survey

Short title: Cardiovascular prevention guidelines in clinical practice

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WHAT'S NEW?

Despite the substantial evidence on the benefits of lifestyle changes, risk factor management, and the use of cardioprotective medications following a cardiac event, this study demonstrates that the implementation of the current European Society of Cardiology guidelines in everyday clinical practice remains inadequate. Two out of three patients had blood pressure levels that were too high, four out of five had elevated low-density lipoprotein cholesterol levels, and 64% of patients continued smoking. Furthermore, only one in three patients with coronary artery disease made efforts to meet the recommended levels of physical activity. Additionally, the study suggests a decrease in prescription rates of cardioprotective medications following a cardiac event. These findings indicate a need for a more intensive implementation of recommendations for secondary prevention, which could help reduce morbidity and mortality among Polish patients with coronary artery disease.

ABSTRACT

Background: There is limited knowledge about the current guidelines implementation in the every-day clinical practice.

Aim: To describe risk factors management in patients with coronary artery disease through lifestyle modifications and the use of drug therapies in order to provide an objective assessment of the implementation of the current guidelines on cardiovascular prevention.

Methods: Twelve departments of cardiology in six regions participated in the study (conducted in 2022–2023). Patients (aged ≤80 years) were recruited and interviewed 6–18 months

following hospitalization due to an acute coronary syndrome (68.7%) or a myocardial revascularization procedure (31.3%).

Results: 801 patients (median age 66.4 years, 595 men and 206 women) were examined. The proportion of patients with high blood pressure was 66.5%, with high low-density lipoprotein cholesterol 79.8%, and with high Hb_{A1c} 16.0%; 19.5% of participants were active smokers and 80.5% were overweight/obese. The proportion of patients taking at least one antiplatelet/antithrombotic agent was 92.8%, a β-blocker 84.7%, an angiotensin converting enzyme inhibitor or angiotensin II type 1 receptor blocker by 79.8%, and a lipid-lowering drug by 89.5% patients. Only 8.6% patients had all the five main risk factors well controlled, while 2.4% had all risk factors at recommended target and were prescribed an antiplatelet or an antithrombotic drug and an angiotensin converting enzyme inhibitor or angiotensin II type 1 receptor blocker.

Conclusions: There is a considerable opportunity of further reduction of cardiovascular risk in Polish patients treated for coronary artery disease. A revision of the on-going and more intensive endorsement of cardiovascular prevention programs is advisable.

Key words: cardiovascular risk, coronary artery disease, secondary prevention

INTRODUCTION

Coronary artery disease (CAD) is a leading cause of death worldwide [1]. In recent years, both pharmacological and invasive treatment methods for CAD have advanced significantly. However, in Poland, the annual mortality rate among patients who survive a myocardial infarction remains about 10% after discharge from the hospital [2]. Studies have identified several causes for this high mortality rate, including insufficient implementation of lifestyle changes, inadequate control of risk factors, and suboptimal pharmacotherapy [3–9]. Recent research has shown a favorable trend for some risk factors, but not for all [9–12]. Although guidelines for the management of risk factors have recently been updated, there is limited knowledge about their impact on everyday medical practice in Poland [13–15].

The purpose of this study was to evaluate the implementation of current guidelines for the secondary prevention of CAD by assessing patients' lifestyle changes, the efficacy of major cardiovascular risk factor management, and the use of recommended pharmacotherapy.

METHODS

The study was conducted across 6 regions: 1 in the northern part of Poland, 2 in the eastern part, 1 in the central part, and 2 in the southern part of the country. In total, 12 cardiology departments from ten different hospitals participated in the study, including 3 municipal hospitals and 7 teaching hospitals.

At each center, the medical history of consecutive patients aged ≤80 years who had been hospitalized due to acute coronary syndrome (unstable angina, ST-segment elevation, and non-ST-segment elevation myocardial infarction), undergone percutaneous coronary intervention, or were scheduled for coronary artery bypass grafting, was reviewed by centrally trained staff. Patients who died during hospitalization were excluded from the study. For individuals hospitalized more than once in 2021–2022 for the reasons mentioned above, only data from the first hospitalization were considered.

Centrally trained research staff carried out data collection using standardized methods across all centers. They reviewed patient medical records, conducted interviews, and performed examinations of the participants. The data collection process followed identical procedures and methods, ensuring consistency across all research centers. Standardization covered both the measurement tools and the methods used for recording and storing data.

Patients were invited to participate in a follow-up examination 6 to 18 months after being discharged. These examinations were conducted in 2022–2023.During the interview data regarding demography (age, sex, marital status, professional activity), CAD, tobacco products use status, blood pressure, prescribed medications, comorbidities, and lifestyle (having regular physical activity 30 min on average five times a week; diet) were obtained using a standardized data collection forms. The specialization of the physicians who treated the study participants were defined on the study participants' answer to the question "Whose care are you currently (in the last 3 months) under for your cardiac condition".

During the physical examination, patients were weighed and measured in a standing position, without shoes or heavy outer garments, using standard scales equipped with a vertical ruler. Body mass index (BMI) was calculated using the formula: BMI = weight [kg]/(height [m]^2). Waist circumference was measured with a metal tape placed horizontally along the mid-axillary line, midway between the lowest edge of the rib cage and the top of the hip bone, while the patient stood. All patients had their blood pressure measured at least twice on the non-dominant arm in a sitting position after resting for at least five minutes. If the systolic value differed by more than 20 mm Hg or the diastolic value by more than 10 mm Hg, the measurement was repeated.

To assess lipid parameters and fasting blood glucose, a venous blood sample was taken in the morning after at least 12 hours of fasting. Smoking status was verified through the concentration of carbon monoxide in the breath using a smoker analyzer (Bedfont Scientific, Model Micro+).

Persistent smoking was defined as smoking at the time of the interview among those who smoked during the month before the index event. High blood pressure was defined as values ≥130/80 mm Hg for patients under 70 years and ≥140/80 mm Hg for those aged 70 years or older. High low-density lipoprotein (LDL) cholesterol was defined as LDL cholesterol levels ≥1.4 mmol/l, high HbA1c as HbA1c levels ≥7.0%, and high BMI as BMI ≥25 kg/m² [13]. Increased waist size was defined as ≥94 cm for men and ≥80 cm for women.

The secondary prevention coefficient was defined as the sum of points assigned for each controlled risk factor (non-smoking, blood pressure <130/80 mm Hg for patients under 70 years and <140/80 mm Hg for patients aged 70 years and older, LDL cholesterol <1.4 mmol/l, HbA1c <7.0%, BMI <25 kg/m²—one point for each). Additionally, one point was given for taking an antiplatelet or antithrombotic agent, and one point for using an angiotensin converting enzyme (ACE) inhibitor or an angiotensin II receptor antagonist. Thus, the secondary prevention coefficient could range from 0 to 7.

The study protocol was approved by the institutional bioethics committees: the Bioethics Committee of the Center of Postgraduate Medical Education in Warsaw (approval numbers 72/2022 and 129/2022), the Bioethics Committee of the Jagiellonian University (approval number 1072.6120.94.2021), the Bioethics Committee of the MSWiA Hospital in Warsaw (approval number 16/2022), and the Bioethics Committee of the Medical University of Bialystok (approval number APK.002.139.2022). All study participants signed the informed consent.

Data management

All data were collected electronically through web-based entry using a unique identification number for each center and individual. The data were entered into an online database. The data management center was responsible for ensuring the completeness, internal consistency, and accuracy of the data.

Statistical analysis

Categorical variables are presented as percentages, while continuous variables are expressed as means with standard deviation or medians (interquartile ranges [IQRs]), as appropriate. The

Shapiro–Wilk test was used to assess the normality of the distribution. The Pearson χ^2 test was applied to categorical variables. Normally distributed continuous variables were compared using Student's t-test, while the Mann–Whitney U test was used for variables without a normal distribution. A two-tailed *P*-value of less than 0.05 was considered statistically significant. A multivariable, stepwise logistic regression analysis was used to assess factors independently related to the value of the secondary prevention coefficient.

In the stepwise backward regression analysis all variables described in Table 1 were included in the initial model and subsequently those with the lowest value of the χ^2 statistics were eliminated in a stepwise approach in order to obtain the model containing variables significantly associated with the dependent variable only. All calculation were run using the STATISTICA 13 software (TIBCO Software, Palo Alto, CA, US).

RESULTS

982 patients were invited to participate in the study. 91 patients didn't respond for invitations, 86 refused for personal or other reasons, 4 patients died. Finally, 801 patients were included in the study (Table 1). Mean age of the study population was 66.5 (8.9) years. Female patients were older, less often professionally active, and less frequently married (Table 1). Overall, 49.4% of patients had been hospitalized for acute myocardial infarction, 19.3% for unstable angina, and 31.3% for myocardial revascularization. The median time from hospital discharge to the follow-up examination was 0.97 (0.76–1.17) years.

The proportions of patients who did not achieve treatment goals 6–18 months after discharge are presented in Table 2. Overall, 19.5% of the study participants were smokers, with a persistent smoking rate of 64.1%. The majority of persistent smokers attempted to quit following the index hospitalization (Table 3).

The median systolic blood pressure was 133.0 (121.5–146.0) mm Hg, and the median diastolic blood pressure was 80.5 (73.0–88.5) mm Hg. High blood pressure, defined as ≥130/80 mm Hg for patients under 70 years and ≥140/80 mm Hg for those aged 70 years or older, was observed in 66.5% of the study participants (Table 2). Blood pressure of ≥140/90 mm Hg was found in 41.6% of participants (43.8% in men and 35.3% in women; $P = 0.03$), while blood pressure of ≥130/80 mm Hg was noted in 71.8% of patients (73.8% in men and 66.2% in women; $P = 0.04$).

The median total cholesterol concentration was 3.71 (3.19–4.47) mmol/l, with LDL cholesterol at 1.97 (1.48–2.55) mmol/l, high-density lipoprotein cholesterol at 1.24 (1.06–1.48) mmol/l, and median triglycerides at 1.20 (0.93–1.63) mmol/l. Overall, 95.0% of participants

had LDL cholesterol levels ≥1.0 mmol/l (95.3% in men and 94.3% in women; *P* = 0.60), while 56.5% (55.4% in men and 59.4% in women; *P* = 0.36) had LDL cholesterol levels ≥1.8 mmol/l.

The median fasting glucose concentration was 5.66 (5.11–6.50) mmol/l, with a median HbA1c concentration of 6.0% (5.6%–6.5%). Overall, 52.3% of participants (53.8% in men and 47.9% in women; *P* = 0.16) had fasting glucose levels of at least 5.6 mmol/l, while 18.7% (17.8% in men and 21.4% in women; *P* = 0.27) had fasting glucose levels of at least 7.0 mmol/l.

The median BMI was 28.8 (25.7–32.0) kg/m². A BMI of ≥25 kg/m² was observed in 80.5% of patients (Table 2), BMI ≥30 kg/m² in 40.6% of patients (41.9% in men and 36.8% in women; *P* = 0.20), BMI ≥35 kg/m² in 11.8% of patients (11.2% in men and 13.2% in women; *P* = 0.45), and BMI ≥40 kg/m² in 2.5% of patients (2.2% in men and 3.4% in women; *P* = 0.34). The median waist circumference was 94.5 (86.0–103.0) cm for women and 101.0 (93.0–103.0) cm for men. Waist circumference ≥80 cm and ≥88 cm was found in 86.3% and 71.6% of women, respectively. Waist circumference ≥94 cm and ≥102 cm was present in 74.1% and 48.0% of men, respectively.

Table 3 presents patients' lifestyle habits, as reported by the participants. A minority of patients declared achieving the recommended level of physical activity. Regarding dietary improvements, most patients reported attempting to integrate healthier habits, primarily focusing on reducing fat intake and increasing the consumption of vegetables and fruits. The smallest proportion of patients reported trying to increase their intake of fish (Table 3).

Proportions of patients taking cardioprotective drugs 6–18 months after discharge from the hospital is presented in the Table 4. Altogether 7.2% patient were taking neither antiplatelet nor antithrombotic agent at the time of interview, while 0.8% were taking both an ACE inhibitor and angiotensin II type 1 receptor blocker (ARB). Altogether, 80.7% patients were taking an ACE inhibitor or an ARB or sacubitril/valsartan. β-blockers were taken by 84.7% of patients, while calcium antagonists by 28.4% and diuretics by 33.3%. In addition, lipid-lowering drugs were taken by 89.5% of patients and antidiabetic agents by 34.6%.

The mean number of main cardiovascular risk factors (smoking, blood pressure, LDL cholesterol, HbA1c, and BMI) at recommended target was 3.21 (0.99) with 8.6% of patients having all five and 39.1% at least four risk factors well controlled. Less than three risk factors at recommended goal was found in 22.0% of the study participants. The mean value of the secondary prevention coefficient was 3.99 (1.19); 3.90 (1.12) in females vs. 4.02 (1.22) in males; *P* = 0.29. Altogether, 2.4% of the patients had all five main cardiovascular risk factors well controlled and were prescribed an antiplatelet or an antithrombotic drug and an ACE inhibitor or an ARB (Figure 1). Age, professional activity, index hospitalization for acute

coronary syndrome, and participation in the cardiac rehabilitation since discharge from the hospital were significantly related to the value of secondary prevention coefficient (Table 5).

DISCUSSION

The study results show that there is a great potential to reduce cardiovascular risk in patients with established CAD in Poland. The recent evidence on the quality of the secondary prevention of CAD in Poland is scarce. The previous multicenter survey, the POLASPIRE I study (carried out in 2017–2018), showed a high proportion of patients with CAD with uncontrolled risk factors [6]. The proportions of patients with risk factors at recommended target were generally similar in participants of POLASPIRE I and II surveys. On the other hand, the proportions of patients prescribed cardioprotective drugs tended to be lower among participants of POLASPIRE II survey as compared to patients studied in the POLASPIRE I study, with exception of ezetimibe (2.5% vs. 15.3%) [6]. For instance, the proportion of patients taking an antiplatelet agent was 92.9% and 87.5%, a β-blocker 89.4% and 84.7%, an ACE inhibitor or an ARB 85.9% and 79.8%, a statin 89.8% and 87.4% among the participants of the POLASPIRE I and II surveys, respectively [6]. Compared to the post-myocardial infarction patients with left ventricular systolic dysfunction who participated in another multicenter study the prescription rate of ACE inhibitors, beta blockers and statins was similar, while of antiplatelets was higher in the present survey [16]. Statins reduce cardiovascular events and mortality in patients with CAD or at high risk of cardiovascular disease. Despite this not all patients with established CAD are taking them on the regular basis. This has not changed during the recent years [4, 6, 10, 13]. The study by Ramotowski et al. [9] showed that 66.8% of smokers undergoing coronary angiography were still smoking 6 months following hospitalization, a very similar figure to the present data. Another single center analysis also provided evidence for low level of adherence to the guidelines for secondary prevention of CAD [8, 17]. The results of the POLASPIRE II survey are in accordance with earlier surveys on secondary prevention in Europe. Importantly, the recent EUROASPIRE V survey, which involved 81 centers from 27 countries provided evidence for unhealthy lifestyles in terms of smoking, diet and sedentary behaviour, insufficient treatment of hypertension, dyslipidaemia, diabetes, and obesity among CAD patients [5]. Generally, the recommended secondary prevention targets were not achieved more often among the POLASPIRE II survey participants compared to patients studied in the EUROASPIRE V survey [5]. Similar conclusions could be drawn from comparison of Polish patients with stable CAD with patients from the other European countries participating in the CLARIFY registry [18].

The study included patients aged ≤80 years only. The benefits of preventive interventions are well-established and evidenced in younger populations but are less clear in those over 80 years old. The management of cardiovascular disease in this group requires specific research. The unsuccessful implementation of cardiovascular prevention in individuals over 80 years old is a multifaceted issue that involves physical, cognitive, and systemic barriers. While prevention is still important in this age group, it needs to be adapted to their specific needs and limitations, focusing on measures that enhance quality of life and balance the risks and benefits of interventions [19, 20].

We did not find evidence for the major sex-based difference in the effectiveness of cardiovascular risk factors treatment following hospitalization for CAD. Sex was not related significantly to the value of secondary prevention coefficient, both in univariable as well as after multivariable adjustments. These findings agree with some, but not all of the studies [21–26].

We found a considerable decrease in the proportion of patients with blood pressure and LDL cholesterol level at the recommended targets compared to the results from the POLASPIRE I survey [6]. It should be, however, underlined that in meantime the recommended targets were changed [13–15, 27, 28]. When we applied the previously recommended targets to the present data we found very similar proportions of patients not achieving the goals (blood pressure 42% in POLASPIRE I and 42% in POLASPIRE II, LDL cholesterol 62% in POLASPIRE I and 56% in POLASPIRE II) [6, 27–32]. These figures along with no major difference in the proportion of smokers (17% vs. 19%) and the prevalence of obesity (42% vs. 41%) may suggest the quality of medical care in the field of secondary prevention has not improved in recent years [6]. Indeed, the patients' lifestyle as well as changes in prescription rates of cardioprotective medications (as compared with the POLASPIRE I survey results) may confirm this suggestion.

Limitations of the study

The present study participants do not represent the entire population of people with CAD: the data concern only those who underwent coronary artery bypass graft or percutaneous coronary intervention or were hospitalized for acute coronary syndrome, so the study results do not necessarily apply to all patients with chronic coronary syndromes. Moreover, only patients aged ≤80 years were included in the study, therefore the results cannot be applied to the older patients. It should be taken into account that patients may have taken medications irregularly; some studies indicate that up to 40% of patients who report that they regularly use the prescribed

pharmacotherapy, it is not confirmed by objective tests [33–36]. Also, the study did not allow to assess the impact of secondary prevention of CAD on the risk of cardiovascular complications. However, it is worth emphasizing that the study was based on direct contact with the patients, and not only on a review of medical records. Further, it was carried out using standardized methods and unified questionnaires, which allowed for a reliable assessment of the control of risk factors in patients, their lifestyle and secondary prevention management that have been enabled for them.

CONCLUSION

Data obtained in this multicenter study show the opportunity of further reduction of cardiovascular risk in Polish patients treated for CAD. This gives rise to the conclusion that a revision of on-going and more intensive endorsement of cardiovascular prevention programs is advisable.

Article information

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Table 1. Characteristics of the study population

	Men n = 595	Women n = 206	*P*-value	Total n = 801
Age, years, median (IQR)	66.0 (60.2–71.3)	68.1 (62.0–73.1)	<0.001	66.4 (61.0–72.1)
Duration of education[a], years, median (IQR)	12 (11.0–15.0)	12 (11.0–14.0)	0.31	12 (11.0–15.0)
Event Myocardial infarction, n (%) Unstable angina, n (%)	 282 (47.4) 116 (19.5)	 114 (55.3) 38 (18.4)	0.16	 396 (49.4) 154 (19.2)

Percutaneous coronary intervention, n (%)	121 (20.3)	37 (18.0)		158 (19.7)
Coronary artery bypass grafting, n (%)	76 (12.8)	17 (8.3)		93 (11.6)
Prior hospitalization for cardiovascular reasons, n (%)	323 (54.3)	104 (50.5)	0.35	427 (53.3)
Employed, n (%)	226 (40.0)	36 (17.5)	<0.001	262 (32.7)
Married, n (%)	501 (84.2)	128 (62.1)	<0.001	629 (78.5)
Participation in a rehabilitation programme following the index hospitalization, n (%)	282 (47.4)	101 (49.0)	0.69	383 (47.8)
Specialization of the physician[a]				
Cardiologist, n (%)	519 (87.2)	186 (90.3)	0.24	705 (88.0)
General practitioner, n (%)	396 (66.6)	154 (74.8)	0.03	550 (68.7)
Diabetologist/endocrinologist, n (%)	73 (12.3)	41 (19.1)	<0.01	114 (14.2)
Other physician, n (%)	95 (15.0)	21 (10.2)	0.04	116 (14.5)
No regular check-ups, n (%)	10 (1.7)	2 (1.0)	0.47	12 (1.5)

[a]Among subjects who participated in the follow-up examination, as declared by the patients

Table 2. Proportions of patients who did not reach treatment goals 6–18 months after discharge

	Men	Women	p	Total
Smoking, n (%)	113 (22.2)	25 (14.1)	0.02	156 (19.5)
Persistent smoking, n (%)	123 (66.8)	27 (54.0)	0.09	150 (64.1)
High blood pressure[a], n (%)	407 (68.9)	122 (59.8)	0.02	529 (66.5)
High LDL cholesterol[b], n (%)	385 (78.7)	145 (82.9)	0.24	530 (79.8)
High HbA1c[c], n (%)	80 (15.9)	28 (16.3)	0.92	108 (16.0)
High BMI kg/m^2[d], n (%)	479 (81.6)	158 (77.5)	0.20	637 (80.5)
Increased waist[e], n (%)	436 (74.1)	176 (86.6)	<0.001	612 (77.3)

[a]Available in 795 cases. [b]Available in 664 cases. [c]Available in 674 cases. [d]Available in 791 cases. [e]Available in 792 cases

Table 3. Patients' lifestyles at the time of interview 6–18 months after discharge (as declared by the patients)

	Men	Women	*P*-value	Total
Persistent smokers having attempted to quit smoking since hospital discharge, n (%)	86 (69.9)	19 (70.4)	0.96	105 (70.0)
Overweight or obese patients having attempted actively to lose weight since discharge, n (%)	266 (62.3)	92 (63.4)	0.80	358 (62.6)
Patients having regular physical activity 30 min. on average 5 times a week, n (%)	210 (35.3)	64 (31.1)	0.24	274 (34.2)
Patients trying to reduce salt intake, n (%)	359 (60.3)	127 (61.7)	0.73	486 (60.7)
Patients trying to reduce fat intake, n (%)	409 (68.7)	142 (68.9)	0.91	551 (68.8)
Patients trying to reduce calories intake, n (%)	349 (58.7)	122 (59.2)	0.85	471 (58.8)
Patients trying to increase vegetables and fruits intake, n (%)	411 (69.1)	154 (74.8)	0.14	565 (70.5)
Patients trying to increase fish intake, n (%)	343 (57.6)	103 (50.0)	0.06	446 (55.7)
Patients trying to increase fat fish intake, n (%)	257 (43.2)	67 (32.5)	<0.01	324 (40.4)
Patients trying to reduce sugar intake, n (%)	361 (60.7)	126 (61.2)	0.90	487 (60.8)
Patients trying to reduce alcohol intake, n (%)	270 (45.4)	66 (32.0)	<0.01	336 (41.9)

Table 4. Proportion of patients taking cardioprotective drugs 6–18 months after discharge from the hospital

	Men	Women	*P*-value	Total
Antiplatelets, n (%)	515 (84.9)	186 (90.3)	0.12	701 (87.5)
Anticoagulants, n (%)	80 (13.4)	23 (11.2)	0.40	103 (12.9)
Antiplatelets or anticoagulants, n (%)	552 (92.8)	191 (92.7)	0.85	743 (92.8)
β-blockers, n (%)	501 (84.2)	178 (86.4)	0.37	679 (84.7)
ACE inhibitors/ARB n (%)	480 (80.7)	158 (77.7)	0.29	638 (79.7)
ACE inhibitors, n (%)	401 (67.4)	117 (56.8)	0.01	518 (64.7)
ARB, n (%)	81 (13.6)	40 (20.4)	0.03	123 (15.4)
Sacubitril-valsartan, n (%)	5 (0.8)	2 (1.0)	0.86	7 (0.9)
Calcium antagonists, n (%)	176 (29.6)	52 (25.2)	0.25	228 (28.5)
Diuretics, n (%)	196 (32.9)	71 (34.5)	0.68	267 (33.3)
Loop diuretics, n (%)	134 (22.5)	42 (20.4)	0.51	176 (22.0)
Thiazid or thiazide-like diuretics, n (%)	71 (11.9)	30 (14.6)	0.28	101 (12.6)
Potassium sparing diuretics, n (%)	145 (24.4)	35 (17.0)	0.02	180 (22.5)
Lipid lowering drugs, n (%)	534 (89.7)	183 (88.8)	0.96	717 (89.5)
Statins, n (%)	521 (87.6)	180 (87.4)	0.76	701 (87.5)
Fibrates, n (%)	20 (3.6)	7 (3.4)	0.97	27 (3.4)
Ezetimibe, n (%)	87 (14.6)	35 (17.0)	0.35	122 (15.2)
PCSK9 inhibitors, n (%)	0 (0.0)	1 (0.5)	0.09	1 (0.1)
Omega-3 fatty acids, n (%)	5 (0.8)	5 (2.4)	0.07	10 (1.2)
Antidiabetic agents, n (%)	207 (34.8)	70 (34.0)	0.88	277 (34.6)
Insulin, n (%)	41 (6.9)	21 (10.2)	0.17	62 (7.7)
Meformin, n (%)	140 (23.5)	49 (23.8)	0.95	189 (23.6)
SGLT2 inhibitors, n (%)	86 (14.5)	26 (12.6)	0.59	112 (14.0)
GLP-1 analogs, n (%)	4 (0.7)	2 (1.0)	0.66	6 (0.7)
Sulphonylurea, n (%)	26 (4.4)	6 (3.0)	0.37	32 (4.0)

Other, n (%)	7 (1.2)	2 (1.0)	0.82	9 (1.1)

Abbreviations: ACE, angiotensin converting enzyme; ARB, angiotensin receptor blocker; GLP-1, glucagon-like peptide-1; PCSK9, proprotein convertase subtilisin/kexin type 9; SGLT2, sodium-glucose co-transporter-2

Table 5. Variables independently related to the secondary prevention coefficient value above 4

Variables	Odds ratio (95% confidence intervals)	*P*-value
Age, per 1 year	1.06 (1.03–1.09)	<0.001
Index hospitalization for acute coronary syndrome	2.16 (1.44–3.25)	<0.001
Professional activity	1.79 (1.14–2.80) 0.01	0.01
Participation in the cardiac rehabilitation since discharge	1.46 (1.01–2.09)	0.04

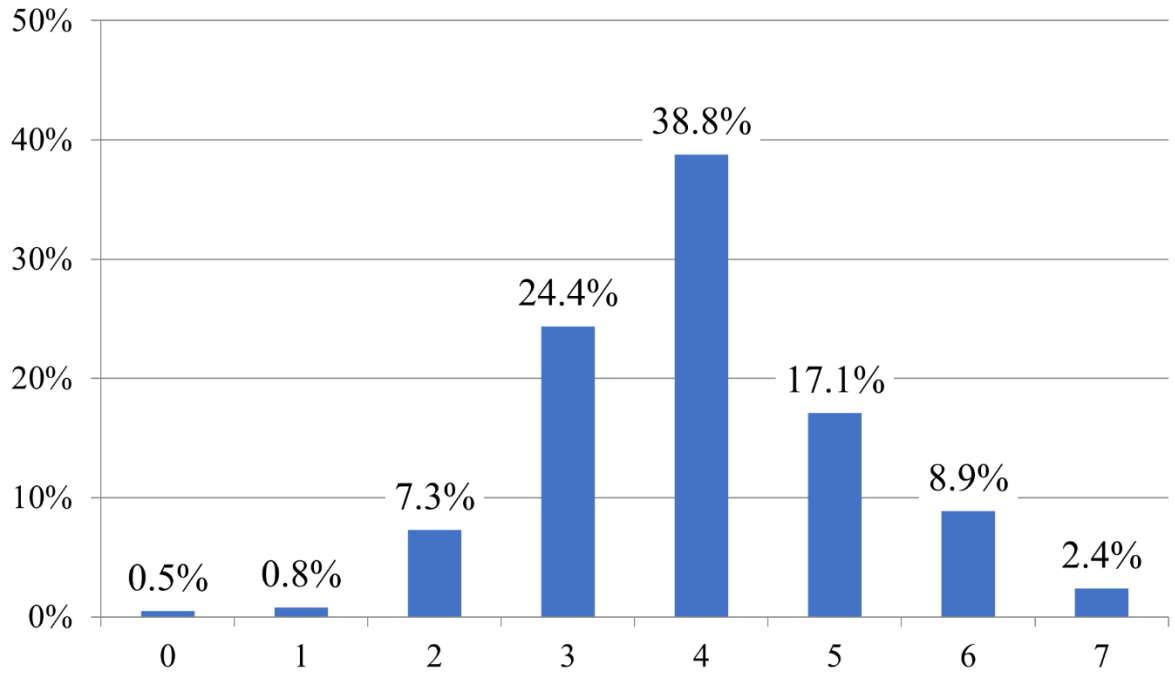

Figure 1. Distribution of the secondary prevention coefficient values